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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,841	09/26/2003	David S. Hall	VELO-1-1001	1325

25315 7590 03/06/2008

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EXAMINER	
LAO, LUN S	

ART UNIT	PAPER NUMBER
2615	

MAIL DATE	DELIVERY MODE
03/06/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/672,841	HALL ET AL.	
	Examiner	Art Unit	
	LUN LAO	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,6-11,13-22,24-29,39-45 and 73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4, 6-11, 13-22, 24-29, 39-45 and 73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This action is in response to amendment filed on 12-18-2007. Claims 1, 5-11, 13-18, 20, 24-27, 39-41, 43 and 45 have been amended and claims 2, 3, 12, 23, 30-38 and 46-72 have been canceled and adds new Claim 73 has been added. Claims 1, 4, 6-11, 13-22, 24-29, 39-45 and 73 are pending.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "a subwoofer speaker" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 25-26 are objected to because of the following informalities: claims 25-26 recites "The system of claim 23," on first line, which appears to be --- The system of claim 16---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 only mentions a second sound signal; it is not clear what is a first sound signal.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 4, 9-11, 13-18, 24-26 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bull (US PAT. 6,546,298) in view of Al-Ali et al (US PAT. 6,584,204).

Consider claim 1, as best understood with regards to the 112 second problem mention above, Bull teaches a subwoofer speaker apparatus comprising (see fig.1):

a subwoofer speaker housing comprising(see fig.1):

at least one subwoofer speaker (22 in fig.1);

a processor (CPU) coupled to the at least one subwoofer speaker(22), the processor being configured to receive a sound signal from an external source (cd-rom); and

a video output port configured to output the generated video signal, wherein the processor is further configured to receive a second sound signal from a second external source(see col. 3 line 53-col. 4 line 67), But Bull does not explicitly teach to generate a video signal based on the sound signal; and to process the second sound signal based on only a plurality of adjustable subwoofer parameters, and output the processed second sound signal to the at least one subwoofer speaker.

However, Bull teaches the computer system that is capable of providing visual and audio recording and playback (see col.2 line 58-67) and generating a video signal base on the sound signal is well known in the art (the examiner is taking a official notice).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to the computer system taught by Bull could have generated a

video signal based on the sound signal as claimed to provide the acoustic characteristic correction device could have been more convenient for the user to adjust the audio output signal.

On the other hand, Al-Ali teaches to process the second sound signal based on only a plurality of adjustable subwoofer parameters, and output the processed second sound signal to the at least one subwoofer speaker (see fig.1 and col. 3 line 29-col. 4 line 67 and col. 6 line 27-col. 7 line 57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Al-Ali into Bull to provide lower distortion in the low-frequency, sub-bass region.

Consider claim 4 Bull as modified by Al-Ali teaches that the external source is a microphone (Al-Ali, see fig.1 (50)).

Consider claims 9-11 Bull as modified by Al-Ali teaches the apparatus wherein the processor is further configured to generate a test sound signal (Al-Ali, see fig.1 and col. 18 line 35-40); and wherein the housing further comprises a port configured to output the test sound signal (Al-Ali, see col. 18 line 35-40); and wherein the processor further receives changes to one of the first plurality of parameters(see fig.1 and col. 3 line 29-col. 4 line 67 and col. 6 line 27-col. 7 line 57).

Claims 17-18, they are essentially similar to claims 9-10 and are rejected for the reason stated above apropos to claims 9-10.

Consider claims 13-15 Bull teaches the apparatus wherein the subwoofer speaker housing further comprises volume controls configured to control output of the at least

one subwoofer speaker(see col. 3 line 53-col. 4 line 67), and wherein the subwoofer speaker housing further comprises an indicator light coupled to the processor inherently (such as, power led in the computer system and see fig.1 and col. 3 line 53-col. 4 line 67), and wherein the subwoofer speaker housing further comprises at least one amplifier (reads on the sound card and CPU) coupled to the at least one subwoofer speaker (see col. 3 line 53-col. 4 line 67).

Consider claim 16 Bull teaches a sound system including a receiver, the sound system comprising (see fig.1):

a display (28);

a control device(12); and

a subwoofer speaker housing comprising (see fig. 1):

at least one subwoofer speaker; and

a processor (CPU) coupled to the at least one subwoofer speaker (22), the processor configured to receive a first sound signal from the receiver and to send the generated video signal to the display, wherein the display presents the received video signal (see col. 3 line 53-col. 4 line 67); But Bull does not explicitly teach a microphone and a second sound signal received by the microphone and a control signal generated by the control device to process the first sound signal based on only a plurality of subwoofer parameters and output the processed sound signal to the at least one subwoofer speaker; and to generate a video signal based on the second sound signal,

However, Bull teaches the computer system that is capable of providing visual and audio recording and playback (see col.2 line 58-67) and generating a video signal base on the sound signal is well known in the art (the examiner is taking a official notice).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to the computer system taught by Bull could have generated a video signal based on the sound signal as claimed to provide the acoustic characteristic correction device could have been more convenient for the user to adjust the audio output signal.

On the other hand, Al-Ali teaches a microphone (see fig.1 (50)) and a second sound signal received by the microphone and a control signal generated by the control device (54) to process the first sound signal based on only a plurality of subwoofer parameters and output the processed sound signal to the at least one subwoofer speaker (see fig.1 and col. 3 line 29-col. 4 line 67 and col. 6 line 27-col. 7 line 57).

Bull as modified by Al-Ali teaches a microphone and a second sound signal received by the microphone and a control signal generated by the control device to process the first sound signal based on only a plurality of subwoofer parameters and output the processed sound signal to the at least one subwoofer speaker; and to generate a video signal based on the second sound signal, and to send the generated video signal to the display, wherein the display presents the received video signal (see col. 3 line 29-col. 4 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Al-Ali into Bull to provide lower distortion in the low-frequency, sub-bass region.

Consider claims 24-26 Bull teaches that the housing further comprises a port mounted on the housing, the port configured to receive the generated video signal from the processor inherently (because the computer includes the video card and see fig.1 and see col. 3 line 53-col. 4 line 29); and the housing further comprises a port configured to receive sound signals from the processor inherently (because the computer includes the sound card and see fig.1 and see col. 3 line 53-col. 4 line 29); and the housing further comprises a volume control configured to control output of the at least one subwoofer speaker (see fig.1 and see col. 3 line 53-col. 4 line 29).

Consider claim 73 Bull teaches the apparatus wherein the subwoofer speaker housing further comprises a port mounted on an exterior of the housing, the port configured to receive the generated video signal from the processor inherently (because the computer includes the video card and see fig.1 and see col. 3 line 53-col. 4 line 29).

8. Claims 6-8 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bull (US PAT. 6,546,298) as modified by Al-Ali et al (US PAT. 6,584,204) as applied to claims 1, 4 and 16 above and further in view of Ouchi (US PAT. 6,072,879).

Consider claim 6 Bull as modified by Al-Ali do not explicitly teach the apparatus further comprising a wireless remote control configured to allow user manipulation of the parameters.

However, Ouchi teaches the apparatus further comprising a wireless remote control configured to allow user manipulation of the parameters (see fig. 17 and col. 13 line 50-col. 14 line 24).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Ouchi into the teaching of Bull and Al-Ali so that the acoustic characteristic correction device could have been more convenient for the user.

Consider 7-8 Bull as modified by Al-Ali and Ouchi teaches the apparatus, wherein the housing further comprises a wireless communication component coupled to the processor, wherein the wireless communication component is configured to receive signals from the wireless remote control that allows a user to manipulate at least one of the parameters (Ouchi, see fig. 17 and col. 9 line 15-col. 10 line 67); and wherein the wireless communication component is includes an optical sensor (Ouchi, see fig.17).

Claims 27 -28, they are essentially similar to claims 7-8 and are rejected for the reason stated above apropos to claims 7-8.

Consider claim 29 Ouchi teaches that the wireless remote control (see fig.1 (150)) includes one or more preset buttons (A-D) configured to send a preset command signal to the processor, wherein the processor processes sound signals according to parameters set in accordance with the received preset command signal (see col.9 line 15-col. 10 line 67 and discussion above claim 16).

9. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bull (US PAT. 6,546,298) as modified by Al-Ali et al (US PAT. 6,584,204) as applied to claims 1 and 4 above and further in view of Emoto (US PAT. 5,572,443).

Consider claim 19 Bull as modified by Al-Ali do not explicitly teach the system, wherein the generated a video signal includes a graphical user interface, the graphical user interface includes a frequency response graph of the sound signal received by the microphone.

However, Emoto teaches the system, wherein the generated a video signal includes a graphical user interface, the graphical user interface includes a frequency response graph of the sound signal received by the microphone (see fig. 3 and see col. 13 line 41-col. 14 line 32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Ouchi into the teaching of Bull and Al-Ali so that the acoustic characteristic correction device could have been more convenient and more accuracy for the user to adjust the audio output signal.

Consider claim 20, Bull as modified by Al-Ali and Emoto teaches the system, wherein the graphical user interface further includes an eight band parametric equalizer limited to subwoofer frequency bands (Emote, see fig.3 (+10 to –10) and see col. 13 line 41-col. 14 line 32).

Consider claims 21-22, Bull as modified by Al-Ali and Emoto teaches that the graphical user interface further includes a parameters section configured to allow a user to set at least a portion of the plurality of parameters using the control device (Emoto,

see fig.3 and see col. 13 line 41-col. 14 line 32); and the portion of the plurality of parameters includes two or more of low pass crossover frequency, low pass crossover slope, subsonic frequency, subsonic slope, phase and polarity (Al-Ali, see col. 7 line 59-col. 8 line 67).

10. Claims 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emoto (US PAT. 5,572,443) in view of Al-Ali et al (US PAT. 6,584,204).

Consider claim 39 Emoto teaches that a first sound signal at a speaker unit from a source external to the speaker unit (see fig. 1A-5A); processing the first sound signal based on a plurality of parameters; outputting the processed first sound signal to at least one speaker of the speaker unit; receiving a second sound signal generated by a microphone at the speaker unit; generating a video signal at the speaker unit based on the second sound signal (see fig.3); and sending the generated video signal to a display coupled to the speaker unit (see figs 1A-5A and see col. 13 line 42-col. 14 line 67); but Emoto does not explicitly teach a subwoofer speaker unit and processing the first sound signal based on only a plurality of adjustable subwoofer parameters.

However, Al-Ali teaches a subwoofer speaker unit and processing the first sound signal based on only a plurality of adjustable subwoofer parameters (see fig.1 and col. 3 line 29-col. 4 line 67 and col. 6 line 27-col. 7 line 57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Al-Ali into Bull to provide lower distortion in the low-frequency, sub-bass region to enhance the output sound audio.

Consider claims 40-42 Emoto as modified by Al-Ali teaches generating a test sound signal by the processor; and sending the generated test sound signal to a sound system coupled to the processor (see figs 1A-5A and 11 and see col13 line 42-col. 14 line 67); and generating an output test sound signal at the sound system based on the received test sound signal; and sending the generated output test sound signal to one or more speakers coupled to the sound system and to the at least one subwoofer speaker of the subwoofer speaker unit via the processor (Al-Ali, see fig.1 and col. 18 line 35-40); and presenting the generated video signal on the display, wherein the presented video signal includes a graphical user interface, the graphical user interface includes a frequency response graph of the sound signal received by the microphone(see figs 1A-5A and 11 and see col. 13 line 42-col. 14 line 67).

Consider claims 43-45 Emoto as modified by Al-Ali teaches the method wherein the graphical user interface further includes an eight band parametric equalizer limited to subwoofer frequency bands(see fig.3 (+10 to –10) and see col. 13 line 41-col. 14 line 32); and wherein the graphical user interface further includes a parameters section configured to allow a user to set at least a portion of the plurality of parameters using a control device(see fig.3 and see col. 13 line 41-col. 14 line 32); and wherein the portion of the plurality of parameters includes two or more of low pass crossover frequency, low pass crossover slope, subsonic frequency, subsonic slope, phase, and polarity (Al-Ali, see col.7 line 59-col. 8 line 67).

Response to Arguments

11. Applicant's arguments with respect to claims1, 4, 6-11, 13-22, 24-29, 39-45 and 73 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sasaki (US PAT. 6,996,240) is recited to show how other related ADJUSTABLE SPEAKER SYSTEMS AND METHOD.

14. Any response to this action should be mailed to:

Mail Stop ____(explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(571) 273-8300

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501 The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See
/Lun-See Lao/
Examiner, Art Unit 2615
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501
Date 02-22-2008

VIVIAN CHIN
SUPERVISORY PATENT EXAMINER